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| 10/092,548      | 03/08/2002  | Junichi Kimura       | 2002_0188A          | 8800             |

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| ART UNIT | PAPER NUMBER |
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2814

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

10/092,548

Applicant(s)

KIMURA, JUNICHI

Examiner

Nathan W. Ha

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 June 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18, 19, 21-26, 28-30, 32-45, 47 and 49-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18, 19, 21-26, 28-30, 32-45, 47 and 49-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 18-19, 21-26, 28-30, 32- 45, and 47, 49, and 51 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al. (US 6,570,469, previously cited, hereinafter, Yamada.)

In regard to claims 18, 34, and 47, in figs. 3 and 4, Yamada discloses a multi-layer board comprising:

a ceramic layer composed of elements 15 and 16 (col. 6, line 1) having a first side and a second side opposite said first side, the ceramic layer having a dielectric constant, 58 and 7, for example, (col. 6, line 2);

an impedance element on said ceramic layer, for example, element 12;

a first resin layer 17 (top layer) on said first side of said ceramic layer so as to contact the ceramic layer (col. 6, line 4), the first resin layer having a dielectric constant lower than said dielectric constant of said ceramic layer, 4, for example, (col. 6, line 5);

a second resin layer 17 (bottom layer) over said second side of said ceramic layer so as to contact the ceramic layer;

a third resin layer 6 (col. 8, line 39) over said first resin layer so as to contact the first resin layer; and

a strip line 2 formed in between said first resin layer and the third layer.

In regard to claims 19, 33, and 38, Yamada further discloses an electronic component 4 mounted on said first resin layer (col. 8, line 39).

In regard to claim 21, Yamada further comprises a strip line on said third resin layer, not numbered (fig. 4).

In regard to claim 22, Yamada further comprises an electronic component 7 mounted on said third resin layer (col. 15, lines 63-65).

In regard to claims 23 and 36, Yamada further comprises a fourth resin layer, also 17, between the first resin layer and the third resin layer (on the third layer).

In regard to claims 24 and 25, wherein said impedance element comprises a patterned inductor 12, as mentioned above (fig. 4).

In regard to claims 28 and 29, the component on the substrate may be functioned as a resistor since they have a impedance value, fir example, fig 12, shows a line element 105 functions as a resistor (col. 1, lines 25-30).

In regard to claim 30, wherein the impedance element comprises a first impedance element 12 on the first side of said ceramic layer, further comprising a second impedance element on said second side of said ceramic layer (fig. 4).

In regard to claim 45, see above discussion regarding to claim 18, where the resin layer has lower dielectric constant than the ceramic layer.

In regard to claims 26 and 32 and with the above discussions, power line is actually ground line since they function as electrical conductive elements, for example, element 7 is a land and connected to a power line (fig. 4).

In regard to claim 35, Yamada further discloses a second strip line on the second resin layer (fig. 4).

In regard to claim 37, wherein a strip line is formed on the third resin layer (fig. 4).

In regard to claim 39, wherein a fourth resin layer is disposed between first and third resin layers (fig. 4). In this case, the first resin layer is layer 6.

In regard to claims 40-41 and 44, resin film is a form of polyimide, the laminated structure forms a capacitor since there is dielectric layer formed between conductive plates (col. 8, lines 50-55).

In regard to claim 42, figure 4 show an impedance element, for example, capacitor on the other side of the substrate.

In regard to claim 43, see above discussions regarding to claim 18, wherein a strip line on the resin layer.

In regard to claims 25, 29, and 41, in the alternative, are rejected under 35 U.S.C. 103(a) as obvious over Yamada, the above reference.

Yamada does not explicitly teach that the second compound in an as laser-trimmed limitation. However, this limitation is taken to be a product by process limitation; it is the patentability of the claimed product and not of recited process steps which must

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be established. Therefore, when the prior art discloses a product which reasonably appears to be identical with or only slightly different than the product claimed in a product-by process claim, a rejection based on sections 102 or 103 is fair. A product by process claim directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See In re Fessman, 180 USPQ 324,326(CCPA 1974); In re Marosi et al., 218 USPQ 289,292 (Fed. Cir. 1983); and particularly In re Thorpe, 227 USPQ 964,966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process " claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claim in "product by process" claim or not.

In regard to claims 49 and 51, the patterned inductor is between the ceramic layer and the first resin layer (see col. 6, lines 37-38). It should be noted that all inductors are formed in a spiral shape.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada as applied to claims 18-19, 21-26, 28-30, 32- 45, and 47, 49, and 51 above, and further in view of Takaya et al. (US 6,908,960, newly cited, hereinafter, Takaya.)

In regard to claim 50, Yamada discloses all of the claimed limitations as mentioned above including inductors in the ceramic substrate. Yamada, however, does not expressly disclose that the inductor is arranged on the surface and directly in contact with the substrate.

Takaya, in figs. 74 and 85, discloses an analogous device including laminated substrate with ceramics and resin therein. The substrate further includes inductors which are formed directly on the surface, for example, element 265. This arrangement is arranged in order to reduce the thickness of the substrate and the layer which cover the device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to arrange the inductors in the substrate in order to take advantage as mentioned above.

### ***Response to Arguments***

4. Applicant's arguments filed 6/23/05 have been fully considered but they are not persuasive. For instance, Applicants contend that the cited art does not disclose a strip line between a first resin layer and a third resin layer. This limitation can be found in fig. 4 wherein the element 12 is formed between resin 6 and first resin 17. Applicants further submit that the inductor is not formed on the ceramic layer 15. As discussed by

Yamada, inductors are from in the ceramic layer 19; therefore, they are on the layer 15 (see col. 11, lines 64-67.)

Applicants further submit that ground layer 7 is not formed on the second side of the layer 17. This can be found also in fig. 3 wherein layer 7 is formed on the bottom of element 17. In fig. 3, for example, 18 is the second resin layer.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Ha whose telephone number is (571) 272-1707. The examiner can normally be reached on M-TH 8:00-7:00(EST).




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Nathan Ha  
July 28, 2005

  
PHAT X. CAO  
PRIMARY EXAMINER